PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 2408.pct	**FOR FURTHER ACTION**	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)
International application No. PCT/GB 03/03266	International filing date *(day/month/year)* 24.07.2003	Priority date *(day/month/year)* 27.07.2002
International Patent Classification (IPC) or both national classification and IPC A01G27/00		
Applicant SMART TECH LTD et Al.		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

   ☒ This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

   These annexes consist of a total of 4 sheets.

3. This report contains indications relating to the following items:

   - I ☒ Basis of the opinion
   - II ☐ Priority
   - III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
   - IV ☐ Lack of unity of invention
   - V ☒ Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
   - VI ☐ Certain documents cited
   - VII ☐ Certain defects in the international application
   - VIII ☐ Certain observations on the international application

Date of submission of the demand	Date of completion of this report
20.02.2004	07.07.2004
Name and mailing address of the international preliminary examining authority: European Patent Office D-80298 Munich Tel. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Authorized Officer Mayer, R Telephone No. +49 89 2399-2094

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No. PCT/GB 03/03266

I. Basis of the report

1. With regard to the **elements** of the international application *(Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*:

Description, Pages

1-30 as originally filed

Claims, Numbers

1-26 received on 02.06.2004 with letter of 28.05.2004

Drawings, Sheets

1/4-4/4 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

   These elements were available or furnished to this Authority in the following language: , which is:

   ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).

   ☐ the language of publication of the international application (under Rule 48.3(b)).

   ☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

   ☐ contained in the international application in written form.

   ☐ filed together with the international application in computer readable form.

   ☐ furnished subsequently to this Authority in written form.

   ☐ furnished subsequently to this Authority in computer readable form.

   ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

   ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

   ☐ the description, pages:

   ☐ the claims, Nos.:

   ☐ the drawings, sheets:

5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

   (Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)

6. Additional observations, if necessary:

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	
	No:	Claims	1
Inventive step (IS)	Yes:	Claims	
	No:	Claims	2-26
Industrial applicability (IA)	Yes:	Claims	1-26
	No:	Claims	

2. Citations and explanations

   see separate sheet

Item V:

The subject-matter of independent claim 1 is not considered novel:

FR-A- 2406387 discloses a plant cultivation system comprising a water insoluble polymer 2 contained within a porous enclosure (see claim 5), wherein the polymer is a poly ethylene oxide hydrogel (p. 2, l. 6, claims). Hence, all the features of claim 1 are disclosed.

The features of the dependent claims, insofar as they are not known from the documents cited in the Search Report for the same purpose as in your application, are generally known to a person skilled in the art, and, therefore, do not produce an inventive step. (Claims 22, 25, 26 are dependent claims since they comprise all the features of claim 1).

The industrial applicability is obvious.

CLAIMS

1. A plant cultivation system comprising a water insoluble polymer contained within a porous bag or enclosure, characterised by the water insoluble polymer being a poly(ethylene oxide) hydrogel.

2. A plant cultivation system as in Claim 1, which is placed close to the roots of plants growing in the ground.

3. A plant cultivation system as in Claim 1, which is placed close to the roots of plants growing in pots or containers.

4. A plant cultivation system as in any of the previous Claims, wherein the poly(ethylene oxide) hydrogel is rendered insoluble in water by physical or chemical cross-linking.

5. A plant cultivation system as in any of the previous Claims, wherein the hydrogel particles are between 100 microns to 1cm in diameter.

6. A plant cultivation system as in any of the previous Claims, wherein the poly(ethylene oxide) hydrogel contains additives.

7. A plant cultivation system as in any of the previous Claims, wherein the poly(ethylene oxide) hydrogel is coloured.

8. A plant cultivation system as in any of the previous Claims, wherein the poly(ethylene oxide) hydrogel swells rapidly on contact with water.

9. A plant cultivation system as in any of the previous Claims, wherein one kilogram of dry poly(ethylene oxide) hydrogel will store 3 to 20 litres of water.

10. A plant cultivation system as in any of the previous Claims, wherein the porous bag is rapidly permeable to water.

11. A plant cultivation system as in any of the previous Claims, wherein the porous bag is produced in different sizes, such that it is suitable for a range of plants and containers.

12. A plant cultivation system as in any of the previous Claims, wherein the porous bag is produced in a range of different shapes, so that it is suitable for a range of plants and containers.

13. A plant cultivation system as in any of the previous Claims, wherein the amount of poly(ethylene oxide) hydrogel in a porous bag is altered depending on the water requirements of the plant for which it is to be used with..

14. A plant cultivation system as in any of the previous Claims, wherein the size of the pores in the exterior material of the porous bag are as large as possible without allowing the significant escape of contained particulate hydrogel.

15. A plant cultivation system as in any of the previous Claims, wherein the porous bag is sealed by heat sealing.

16. A plant cultivation system as in Claims 1 to 15, wherein the bag is sealed by stitching.

17. A plant cultivation system as in Claims 1 to 15, wherein the bag is sealed by glue.

18. A plant cultivation system as in any of the previous Claims, wherein the porous bag is produced from a material with an air water surface contact angle below 90°.

19. A plant cultivation system as in Claims 1 to 17, wherein for plants with low water requirements, the porous bag is produced from a material with an air water surface contact angle of greater than 90°.

20. A plant cultivation system as in any of the previous Claims, wherein the porous bag is produced from cellulose or a cellulose derivative.

21. A plant cultivation system as in any of the previous Claims, wherein the porous bag is knitted, braided, woven or in the form of felt.

22. A method of using a plant cultivation system, as described in any of the previous Claims, wherein the plant cultivation system is placed within a vessel containing a plant growth medium and a plant.

23. A method of using a plant cultivation system as in Claim 22, wherein the vessel does not contain any apertures on the lower surface.

24. A method of using a plant cultivation system as in Claim 22, wherein the vessel contains apertures to allow excess water to drain away or enter.

25. A method of using the plant cultivation system described in Claims 1 to 22, wherein the plant cultivation system is placed underneath a vessel containing a plant growth medium and a plant, and wherein the vessel contains one or more apertures in the lower surface which is in contact with the plant cultivation system.

26. A method of using the plant cultivation system described in any of Claims 1 to 22, wherein the plant cultivation system is placed on or under capillary matting in a container and a plant containing vessel is also placed on the capillary matting, wherein the plant containing vessel is provided with one or more apertures in its place.